CLAIMS

1. A compound of the formula (I):

$$\mathbb{R}^{1}$$

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wherein W is a group of the following formula (VIII) binding to any possible position on the Q;

OH
$$H$$
 H_2 C N C C R^4 R^5 R^6 R^7 (VIII)

Q is, together with W, a group of the formula: $-C(W)=C(R^{3A})-N(R^3)-$, $-C(R^{3A})=C(W)-N(R^3)-$, $-C(R^{3A})=C(W)-N(W)-$, $-C(W)=N-N(R^3)-$, $-C(R^{3A})=N-N(W)-$, $-N=C(W)-N(R^3)-$, $-N=C(R^{3A})-N(W)-$, -C(W)=N-O-, or -C(W)=N-S-; R^{3A} and R^{3B} are independently a hydrogen atom or an optionally substituted lower alkyl group;

R⁴, R⁵, R⁶, and R⁷ are independently a hydrogen atom or an optionally substituted lower alkyl group;

 R^1 is an optionally substituted lower alkyl group, or a group of the formula: $-X-R^{1e}-C(=O)NR^{1a}R^{1b}$, $-X-R^{1e}-C(=O)OR^{1a}$ or $-X-R^{1d}$ (where X is a direct bond or a group of the formula: -O-, -S-, $-N(R^{1c})-$, $-N(R^{1c})C(=O)-$, $-C(=O)N(R^{1c})-$, $-N(R^{1c})SO_2-$, $-SO_2N(R^{1c})-$, or $-C(=O)NHSO_2-$, R^{1e} is a direct bond or an optionally substituted lower alkylene group, R^{1a} , R^{1b} , and R^{1c} are independently a hydrogen atom, an optionally substituted lower alkyl group, an optionally substituted aralkyl group, an optionally substituted aryl group, an optionally substituted cycloalkyl group, or an optionally substituted heterocyclic group, or R^{1a} and R^{1b} may combine

each other, and with the adjacent nitrogen atom to which they bond, form a saturated 3- to 8-membered cyclic amino group optionally having a group of the formula: -O- or -NH- within the ring (said saturated cyclic amino group being substituted or unsubstituted), R^{1d} is a hydrogen atom, an optionally substituted lower alkyl group, an optionally substituted phenyl group, or an optionally substituted cycloalkyl group (a -CH₂- moiety of said cycloalkyl group optionally being replaced by one or more groups of the formula: -O- or -N(R^{1a})-, which are the same or different));

R² is a hydrogen atom, a halogen atom, an optionally substituted lower alkyl group, an optionally substituted lower alkenyl group, an optionally substituted amino group, a hydroxy group, a lower alkoxy group, or R¹ and R² may combine each other and form a methylenedioxy group and said methylenedioxy group may optionally be substituted by a carboxyl group or a lower alkoxycarbonyl group;

R³ is a hydrogen atom or an optionally substituted lower alkyl group, or R¹ and R³ may combine each other and form a divalent group of the formula: -X-R¹e-C(=O)- (provided that the bond at the carbonyl side of the above formula binds to the atom to which R³ of the compound of the formula (I) attaches);

Ar is a group of the following formula (IX), formula (X), or formula (XIII);

A group of Formula (IX):

(in which R⁸ is a hydrogen atom, a halogen atom, a trifluoromethyl group, an optionally substituted lower alkyl group, a lower alkoxy group,

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a lower alkoxycarbonyl group, a carboxyl group, an optionally substituted benzyloxy group, a hydroxy group, a nitro group, an optionally substituted lower alkylsulfonyl group, an optionally substituted lower alkylthio group, an optionally substituted lower alkylthio group, an optionally substituted lower alkylsulfinyl group, a mercapto group, a cyano group, an amino group, an optionally substituted lower alkanoylamino group, an optionally substituted mono- or di-lower alkylamino group, an optionally substituted lower alkylsulfonylamino group, or an optionally substituted benzenesulfonylamino group:

10 amino group;

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R⁹ and R¹⁰ are independently a hydrogen atom, a halogen atom, an optionally substituted lower alkyl group, a lower alkoxy group, a lower alkoxycarbonyl group, a hydroxy group, an amino group or an optionally substituted mono- or di-lower alkylamino group, or two of R⁸, R⁹, and R¹⁰ may combine each other and form a methylenedioxy group, and said methylenedioxy group may optionally be substituted by a carboxyl group or a lower alkoxycarbonyl group, or two of R⁸, R⁹, and R¹⁰ may combine each other and form a group of the formula: -NR^{8a}C(=O)CR^{8b}=CR^{8c}- (R^{8a}, R^{8b}, and R^{8c} being the same or different and each a hydrogen atom or an optionally substituted lower alkyl group);

provided that when R^1 is a group of the formula: $-O-CH_2-C(=O)OR^{1a}$ and all of R^4 , R^5 , R^9 , and R^{10} are a hydrogen atom, then R^8 is not a halogen atom or a trifluoromethyl group substituting on the 3-position):

A group of Formula (X):

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(in which Z is an oxygen atom or a sulfur atom;

R¹¹ is a hydrogen atom, a lower alkyl group, or a group of the formula: -SO₂R¹⁴ or the formula: -NR¹⁵R¹⁶ (R¹⁴ is an optionally substituted lower alkyl group, an optionally substituted phenyl group, an optionally substituted aralkyl group, R¹⁵ and R¹⁶ are independently a hydrogen atom, an optionally substituted lower alkyl group, or an optionally substituted benzyl group);

R¹² is an oxygen atom, a sulfur atom or H₂;

 R^{13} is an oxygen atom or H_2 ;

nn and mm are each 0 or 1): or

A group of Formula (XIII):

(in which R¹⁷ is a hydrogen atom, a halogen atom, or a cyano group), or a pharmaceutically acceptable salt thereof.

2. The compound according to claim 1, wherein R¹ is a group of the formula: -X-R¹e-C(=O)NR¹aR¹b or the formula: -X-R¹e-C(=O)-OR¹a, or R¹ and R³ may combine each other and form a divalent group of the formula: -X-R¹e-C(=O)- (wherein X is a group of the formula: -O-or -S- and R¹e is a group of the formula: -CR¹fR¹g- (R¹f and R¹g are independently a hydrogen atom, an optionally substituted lower alkyl group, an optionally substituted cycloalkyl group, an optionally

substituted aryl group, or an optionally substituted aralkyl group, or both may combine each other, and with the carbon atom to which they bond, form an optionally substituted cycloalkane ring, provided that both R^{1f} and R^{1g} are not simultaneously a hydrogen atom)),

or a pharmaceutically acceptable salt thereof.

3. The compound according to claim 1 or claim 2, which is a compound of the formula (I'):

$$R^{3A}$$
 R^{3}
 R^{3}
 R^{2}
 R^{2}

wherein R¹, R², R³, R^{3A}, and W are as defined in claim 1, or a pharmaceutically acceptable salt thereof.

4. The compound according to claim 3, wherein R¹ binds to the 5-, 6- or 7-position of the indole ring of the compound of the formula (I'), and R² is a hydrogen atom, or a pharmaceutically acceptable salt thereof.

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5. The compound according to claim 3, wherein R² is a group other than a hydrogen atom, and one of R¹ and R² binds to the 6-position of the indole ring of the compound of the formula (I'), and the other binds to the 7-position thereof, or a pharmaceutically acceptable salt thereof.

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6. The compound according to any one of claims 1 to 5, wherein Ar is a group selected from the following substituents:

wherein n is 0, 1, or 2,

or a pharmaceutically acceptable salt thereof.

7. The compound according to any one of claims 1 to 6, wherein R^1 is a group of the formula: $-X-R^{1e}-C(=O)NR^{1a}R^{1b}$ or $-X-R^{1e}-C(=O)OR^{1a}$;

X is a direct bond or a group of the formula: -O-;

R¹a and R¹b, when it exists, are independently selected from

- (i) a hydrogen atom,
- (ii) an unsubstituted lower alkyl group,
- (iii) a lower alkyl group being substituted by one or more substituents, which are the same or different, and said substituent(s) are selected from a carboxyl group, a lower alkoxycarbonyl group, an amino group, a hydroxy group, an alkoxy group, a mercapto group, an alkylthio group, a carbamoyl group, an indolyl group, a guanidino group, an imidazolyl group, and a phenyl group optionally being substituted by a hydroxy group, or
- (iv) a saturated 3- to 8-membered cyclic amino group which is formed by combining R^{1a} and R^{1b} together with the adjacent nitrogen atom to which they bond, and optionally has a group of the formula: -O- or -NH- within the ring (said saturated cyclic amino group being

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unsubstituted, or optionally being substituted by a carboxyl group or a lower alkoxycarbonyl group), or a pharmaceutically acceptable salt thereof.

- 8. The compound according to claim 7, wherein R¹ is a group of the formula: -X-R^{1e}-C(=O)NR^{1a}R^{1b} (where the moiety of the formula: NR^{1a}R^{1b} is an amino acid or amino acid ester residue binding to the carbonyl group of the above formula at the N-terminus thereof, and R^{1a} binds to the nitrogen atom at the N-terminus thereof when R^{1a} and R^{1b} do not form a cyclic group), and
- X and R^{1e} are a direct bond, or a pharmaceutically acceptable salt thereof.
 - 9. The compound according to any one of claims 1 to 3, wherein R¹ is a group of the formula: -C(=O)NR¹aR¹b, R¹a and R¹b are independently a hydrogen atom or an optionally substituted lower alkyl group, or R¹a and R¹b may combine each other, and with the adjacent nitrogen atom to which they bond, form a saturated 3- to 8-membered cyclic amino group optionally having a group of the formula: -O- or -NH-within the ring (said saturated cyclic amino group being unsubstituted, or optionally being substituted by a carboxyl group or a lower alkoxy-carbonyl group);

R² is a hydrogen atom, a halogen atom, an optionally substituted lower alkyl group, a hydroxy group, or a lower alkoxy group;

both of R^4 and R^5 are a hydrogen atom;

Ar is a group of the formula (XVI):

(in which R18 is a halogen atom or a trifluoromethyl group),

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or a pharmaceutically acceptable salt thereof.

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- 10. The compound according to any one of claims 2 to 6, wherein R^1 is a group of the formula: $-X-CR^{1f}R^{1g}-C(=O)OR^{1a}$, or a pharmaceutically acceptable salt thereof.
- 11. The compound according to any one of claims 2 to 6, wherein X is a group of the formula: -O-, or a pharmaceutically acceptable salt thereof.
- 12. The compound according to any one of claims 1, 2, 6 to 11, wherein Q is, together with W, a group of the formula: $-C(W)=C(R^{3A})-N(R^3)$ or $-C(R^{3A})=C(W)-N(R^3)$ -, or a pharmaceutically acceptable salt thereof.
- 13. A pharmaceutical composition comprising as an active ingredient the compound as set forth in any one of claims 1 to 12, or a pharmaceutically acceptable salt thereof.
- 14. An agent for treatment of obesity, hyperglycemia, frequent urination, urinary incontinence, depression, or bilestone, which comprises as an active ingredient the compound as set forth in any one of claims 1 to 12, or a pharmaceutically acceptable salt thereof.
- 15. A method for treatment of obesity, hyperglycemia, frequent urination, urinary incontinence, depression, or bilestone, which comprises administering to a patient in need an effective amount of the compound as set forth in any one of claims 1 to 12, or a pharmaceutically acceptable salt thereof.
- 16. A use of the compound as set forth in any one of claims 1 to 12, or a pharmaceutically acceptable salt thereof, in preparation of an agent for treatment of obesity, hyperglycemia, frequent urination, urinary incontinence, depression, or bilestone.